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| POLICY TITLE | | PROVINCIAL WATER QUALITY OBJECTIVES FOR RADIONUCLIDES AND TOTAL DISSOLVED SOLIDS | NO. 15-03-01 | | |
| <u>Legislative Authority</u> the Ontario Water Resources Act | | | | | |
| <u>Statement of Principles</u> <p>The Ministry has revised the Provincial Water Quality Objectives for radionuclides and Total Dissolved Solids (TDS) for the protection of aquatic life and recreation. The previous objectives are listed in Table 1 of the MOE publication "Water Management", November, 1978 (pp. 34-36).</p> <table border="0"> <tr> <td style="vertical-align: top;"> 1. <u>Provincial Water Quality Objectives for Radionuclides</u> </td> <td> Radiation exposure should be kept as low as reasonably achievable, economic and social factors being taken into account. The Provincial Water Quality Objectives for radionuclides are based on drinking water requirements, which are derived from dose-response relationships as recommended by the International Commission on Radiological Protection (ICRP) in Publication 26. </td> </tr> </table> <p style="text-align: right;">August 22, 1986</p> | | | | 1. <u>Provincial Water Quality Objectives for Radionuclides</u> | Radiation exposure should be kept as low as reasonably achievable, economic and social factors being taken into account. The Provincial Water Quality Objectives for radionuclides are based on drinking water requirements, which are derived from dose-response relationships as recommended by the International Commission on Radiological Protection (ICRP) in Publication 26. |
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| <u>Point of Contact</u> | | Director, Water Resources Branch | | | |
| <u>Effective Date</u> | | | | | |
| August 23, 1982 | | | | | |

Objectives* are as follows:

| Radionuclide** | Provincial Water Quality Objective*** Becquere ls/Litre |
|----------------|---|
|----------------|---|

| | |
|-------------------------|--------|
| Cesium ₁₃₇ | 50 |
| Iodine ₁₃₁ | 10 |
| Radium ₂₂₆ | 1 |
| Strontium ₉₀ | 10 |
| Tritium | 40,000 |

* The radionuclide objectives are based on the total concentration of an unfiltered water sample.

** If two or more radionuclides affecting the same organ or tissue are found to be present, the following relationship based on the International Commission on Radiological Protection Publication 26 should be satisfied:

$$\frac{c_1}{C_1} + \frac{c_2}{C_2} + \dots + \frac{c_i}{C_i} \leq 1$$

where c_1 , c_2 and c_i are the observed concentrations, and C_1 , C_2 and C_i are the maximum acceptable concentrations for each contributing radionuclide.

*** Radionuclide concentrations exceeding the maximum acceptable concentrations may be tolerated provided that the duration of the increase is short and that the annual average concentrations remain below this level and meet the restriction for multiple radionuclides.

For further information on the radionuclide objective as related to potable water supplies, reference should be made to the MOE publication "Ontario Drinking Water Objectives".

2. Provincial Water Quality
Objective for Total
Dissolved Solids

The previously-established Provincial Water Quality Objective for Total Dissolved Solids (TOS) has been withdrawn, following an MOE review which concluded that there was insufficient scientific evidence to support the Objective. The Ministry plans to undertake a systematic program to develop a revised objective for TOS. Pending completion of that task, appropriate TOS requirements will be developed as the need arises on a case-by-case basis. Inquiries concerning the appropriate TOS value for a given area can be directed to the Water Resources Branch or the appropriate MOE Regional Office.